AFFIDAVIT

The State of Michigan	)
	) S.S.
County of Genessee	)

I, Katie Lin Brasher-Beaudry of Linden, Michigan, do hereby swear and affirm as follows:

1. My name is Katie Lin Brasher-Beaudry, and I am an epidemiologist. I earned my Master of Public Health degree from The College of Human Medicine at Michigan State University, where I completed studies in epidemiology, communicable disease transmission and infection prevention. I hold a Bachelor of Science degree in microbiology from Michigan State University, as well. My work history includes being a consultant in infection prevention and epidemiology and working as a consultant in healthcare analytics. In my current capacity, as a Clinical Infection Preventionist at Beaumont Health, I conduct surveillance of healthcare acquired infections and track infections to their source using clinical data. My prior role, as a Clinical Infection Preventionist at Beaumont Hospital Royal Oak, required me to consult in treatment and follow-up of personnel and patients/visitors exposed to communicable diseases and conduct epidemiological investigations of outbreaks to

identify causal associations. The education and training I have received in epidemiology, has required me to analyze data and then consult with hospital departments, physicians and other medical staff on best practices for preventing and controlling the spread of infectious diseases based on risk and severity of illness. My work experience has enabled me to become a well-rounded consultant in the epidemiology and infection prevention field.

2. COVID-19 is a completely new infection in people and has not been studied for very long. There is a lot we do not understand about this virus. One thing that we are eager to know more about is our immunity to it. No one had immunity when the pandemic began. Learning about our immunity to the virus will take time, but it is the key to resuming life as we knew it pre-pandemic. Developing immunity requires the adaptive immune response part of our immune system to learn about this novel coronavirus and remember it. This part of our body's defense system includes cells that produce targeted antibodies that can stick to the virus to stop it and T cells that can attack just the cells infected with the virus, called the cellular response. This learning process takes time. If the adaptive immune response is powerful enough, then it could leave a memory of the infection that will provide protection in the future. It is unknown right now

if the immune system will remember the new coronavirus and it has not been around long enough to know how long immunity lasts.

3. Even if someone tests positive for antibodies to the virus, this does not guarantee immunity. While it would be very useful to use the antibody test as a pass for people to go back into public and go back to work, it's not that simple. Nearly every infected person who has recovered from COVID-19 will test positive for antibodies but they differ. Neutralizing antibodies are the ones that we want. They are the ones that will defend a cell from COVID-19 by neutralizing any effect it has biologically. Neutralisation renders the particle no longer infectious or pathogenic. A study of 175 recovered patients in China showed 30% had very low levels of these neutralizing antibodies. Another issue is that just because you might be protected by your antibodies, it doesn't mean you cannot still have the virus and pass it onto others. The duration of immunity, whether by infection or immunization will tell us how likely we are able to stop the virus from spreading and how deadly it is. https://www.bbc.com/news/health-52446965.

4. The Centers for Disease Control and Prevention recently updated its isolation guidance based on the latest science about COVID-19 showing that people can continue to test positive for up to 3 months after diagnosis and not be infectious to others. Many media reports suggest that this means a person is immune to reinfection with SARS-CoV-2, the virus that causes COVID-19, in the 3 months following infection. This is not necessarily true. The latest data simply suggests that retesting someone in the 3 months following initial infection is not necessary unless that person is exhibiting the symptoms of COVID-19 and the symptoms cannot be associated with another illness. People with COVID-19 should be isolated for at least 10 days after symptom onset and until 24 hours after their fever subsides without the use of fever-reducing medications.https://www.cdc.gov/media/releases/2020/s0814-updated-isolation-guidance.html

5. On Monday, August 24, 2020 a pre-print study from the University of Hong Kong was released indicating that a 33-year old man living in Hong Kong had COVID-19 twice this year. The study has been accepted for publication in the journal Clinical Infectious Diseases. The man was symptomatic the first time but had no obvious symptoms the second time. The second case of COVID-19 occurred 142 days after the first, which is

approximately 4.5 months later. This is the first patient that has been known to be infected twice. This proves that the patient's immunity from the initial infection was short lived.

6. For the study, researchers at the university and various hospitals in Hong Kong analyzed specimens collected from the patient 10 days after his symptoms emerged in the first episode and then one day after hospitalization for the second episode. Genetic analysis suggested that the first infection was from a strain of the coronavirus most closely related to strains from the United States or England, and the second infection was most closely related to strains from Switzerland and England.

7. Akiko Iwasaki, of the Yale School of Medicine who was not involved in the study, wrote in a Twitter post on Monday that since reinfection can occur, herd immunity by natural infection is unlikely to eliminate the novel coronavirus. "The only safe and effective way to achieve herd immunity is through vaccination," Iwasaki tweeted. "Lastly, while this is a good example of how primary infection can prevent disease from subsequent infection, more studies are needed to understand the range of outcomes from reinfection.https://www.cnn.com/2020/08/24/health/covid-19-reinfection-hong-kong-study/index.html.

8. Based on this new finding that reinfection can occur a short period of time after the initial infection, we now understand that immunity to COVID-19 is short lived. This is important to document, but we will need to see a lot more cases of reinfection to understand how immunity varies. Just because someone is asymptomatic during the second infection, does not mean that they cannot pass it onto others. Some people may experience symptoms during a second infection. We also don't know if those who are older or who have underlying health conditions, such as obesity, hypertension and asthma are more likely to experience symptoms again if re-infected. People with underlying health conditions have weakened immune systems, so there is concern about how well their bodies will defend a second infection. Until more cases of reinfection are studied, we cannot draw any conclusions aside from immunity does not last long in some people.
9. One of the most important lessons from the reinfection of the Hong Kong man is that herd immunity by natural infection is likely not the answer to eliminating COVID-19. Vaccination is going to be the key to preventing spread of this coronavirus. Until vaccination is a possibility, people who have had COVID-19 and recovered, will need to continue taking precautions such as social distancing and wearing a mask.

10. If I were acting as a consultant for any jail or prison during this pandemic, I would advise for every preventative measure to be taken, including depopulating the jails and prisons as much as possible. According to the CDC, there are many opportunities for COVID-19 to be introduced into a correctional or detention facility, including daily staff ingress and egress; transfer of incarcerated/detained persons between facilities and systems, to court appearances, and to outside medical visits; and visits from family, legal representatives, and other community members. Some settings, particularly jails and detention centers, have high turnover, admitting new entrants daily who may have been exposed to COVID-19 in the surrounding community or other regions. https://www.cdc.gov/coronavirus/2019-ncov/community/correction-detention/guidance-correctional-detention.html In addition, it is nearly impossible to practice proper social distancing, provide adequate PPE, disinfect the environment adequately, and ensure proper hand hygiene in jails and prisons. For these reasons, jails and prisons are the perfect environment for a virus like COVID-19 to spread like wildfire.

SO SWORN:

/s/ Katie Lin Brasher-Beaudry
KATIE LIN BRASHER-BEAUDRY

Kimberly W. Stout
KIMBERLY W. STOUT
Subscribed and sworn to
Before me, on the 27th day
Of August, 2020:
NOTARY PUBLIC acting in Genesee County

My commission expires: Jan 28, 2022